Division of Economic & Financial Studies

ECON840 - APPLIED ECONOMETRICS I
E1, 2006

1. Introduction

This course introduces M.Ec students to basic econometric methods needed for empirical research on economic, business and financial phenomena.

The topics covered are introductory and they are flexible enough to cater for students who previously have had only minimal exposure to the mathematical and statistical theory. Starting from first principles, standard econometric methods will be outlined to the extent necessary for students to understand key concepts, apply the methods, and interpret results.

2. Class Arrangement

CLASSES: Monday 6 – 9 pm
ROOM: W6B 320

In weeks 4 and 8 (20 March and 1 May), practical sessions will be held in a computing laboratory (E4B306). Software programs used in this course include *MS Excel, DxData* and *Shazam*. No previous computing experience is required, but a knowledge of spreadsheet programs would be useful. Students are required to bring a blank diskette (3.25") for these sessions. (Memory stickes cannot be used on those computers.) *Shazam* program on CD will be made available for loans later. Students are allowed to install it on their own computer.

3. Text

- **Gujarati, Damodar N., *Essentials of Econometrics*, McGraw-Hill, 3rd edition**

4. Assessment

Assessment for ECON840 will consist of two assignments, and an end of semester examination:

Assignments:	30% (15% for Assignment I and 15% for Assignment II)
Examination:	70%

To pass this unit, a student has to submit all two assignments, obtain a satisfactory overall mark, and pass the final examination.

The first assignment will be due on Monday May 1 (Week 8) and the second on Monday May 29 (Week 12). **Students are strongly warned against plagiarism.**

KEEP A PHOTOCOPY OF YOUR ASSIGNMENTS TO INSURE YOURSELF AGAINST LOSS.

Under the current grading system, a **standardised numerical grade (SNG)** will be awarded together with a band grade HD, D, Cr, P, PC, or F.

It is important for students to note that the SNG is NOT the weighted aggregate of the raw marks for the above three assessment components. It is rather a detailed grade that is chosen from 0 to 100 based on other criteria as well as the raw marks. For instance, the SNG for a student who gains a raw aggregate mark of 55 but fails the test/examination would be lower than 45 indicating that he/she fails the unit.

As such, an SNG of, say, 73 or 74 does NOT mean that the student's aggregate mark is one or two marks below the threshold for a D. It means that his/her work and performance in the course is of predominantly good quality and did better than other students in the Cr band but not quite of superior quality needed for a D.

5. Course Outline

Topic 1: Introduction

- What is econometrics?
- Methodology of econometrics
- The summation operator
- Numerical summary of data
- Graphical summary of data
- Grouped Data

Topic 2: Random Variables and Probability Distributions

- Random variables
- Probability distribution for discrete random variables
- Probability distribution for continuous random variables
- Joint, marginal and conditional probabilities
- The expectation operator
- Variance and covariance
- Population and sample

Topic 3: Some Important Probability Distributions

- Normal distribution
- Student's t distribution
- Chi-square distribution
- F distribution
- Sampling distribution of the sample mean
- Central limit theorem

Topic 4: Point Estimation and Interval Estimation

- Desirable properties of a point estimator
- Confidence intervals

Topic 5: Hypothesis Testing

- Concepts of hypothesis testing
- Test procedure
- Interpretation of a test result
- Types of errors
- Significance level and power of a test
- P value method
- Confidence intervals and hypothesis testing

Topic 6: Regression Analysis

- Linear correlation and regression
- Simple regression and multiple regression
- Standard assumptions of linear regression models
- Ordinary Least Squares (OLS) estimation
- The Gauss-Markov theorem
- Population regression and sample regression
- Goodness of fit
- Reporting the results
- Interpretation of individual coefficients
- Confidence intervals and hypothesis tests for individual coefficients
- Tests on sets of regression coefficients
- Prediction

Topic 7: Other Issues

- Functional forms of the regression model
- Diagnostic checking (heteroscedasticity and autocorrelation)

Staff

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